UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R042XA060NM

Site Name: Mesa Breaks

Precipitation or Climate Zone: 8-10 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on mesa side slopes and along low hills, benches, and breaks dissected by narrow draws. It is characterized by a complex of soil types and miscellaneous land types including Rock outcrop, badland, and riverwash. Due to exposure and soils, some areas are potentially very productive, while other areas are not. Slopes range from 10 to 65 percent; exposures are variable.

Land Form:

1. Break
2. Scarp slope
3.

Aspect:

1. Not significant.
2.
3.

	Minimum	Maximum
Elevation (feet)	4500	6,000 ?
Slope (percent)	10	65
Water Table Depth (inches)	N/A	N/A

Flooding:	Minimum	Maximum
Frequency	N/A	N/A
Duration	N/A	N/A

Ponding:	Minimum	Maximum
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

N/A

CLIMATIC FEATURES

Narrative:

This site has an arid climate with distinct seasonal temperature variations and large annual and diurnal temperature changes characteristic of a continental climate.

Precipitation averages 8 to 10 inches annually. Deviations of 4 inches or more from the average are quite common. Fifty percent of the moisture is received from July to November, which is the dominant growing season of native plants. Summer moisture is characterized by high intensity, short duration rainstorms. Winter precipitation averages less than one half per month, usually in the form of rain. There are occasional snow storms of short duration.

Temperatures vary from a mean monthly average of 77F in July to 34F in January, with the maximum being 104F and the minimum 10F below zero. The average last killing frost in the spring is April 15, and the average first killing frost in the fall is October 28. Frost free season is an average of 185 days. Temperatures are conducive for native grass and forb growth from March through November.

Spring winds of 15 to 40 miles per hour are common from February to June. These winds increase transpiration rates of native plants and rapidly dry the surface soil. Small soil particles are often displaced by the wind near the soil surface often resulting in structural damage to native plants, especially young seedlings.

	Minimum	Maximum
Frost-free period (days):	140	165
Freeze-free period (days):	190	213
Mean annual precipitation (inches):	8.00	10.00

Monthly moisture (inches) and temperature (^{0}F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	0.31	0.44	34.1	36.2
February	0.31	0.46	39.3	42.0
March	0.25	0.54	46.3	48.8
April	0.33	0.52	53.3	56.5
May	0.34	0.50	62.5	64.5
June	0.46	0.70	70.6	74.3
July	1.18	2.35	75.3	78.5
August	1.64	2.47	73.0	75.9
September	1.00	1.56	66.5	68.6
October	0.89	1.25	55.5	57.4
November	0.36	0.54	43.7	45.4
December	0.44	0.57	35.1	37.2

Climate Stations:

Station ID	NM0915	Location	Bernardo	From: Period	1962	1990
				To:		
Station ID	NM0983	Location	Bingham	From: Period	1961	1990
				To:		
Station ID	NM0234	Location	Albuquerque	From: Period	1961	1990
				To:		
Station ID	NM5150	Location	Los Lunas	From: Period	1961	1990
				To:		

INFLUENCING WATER FEATURES

Narrative:

This site is not influenced by water from wetland or stream.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:
The soils of this site derived from a variety of parent materials, including limestone, sandstone, gypsum, shale, and basalt. The surface textures range from medium fine to gravelly, cobbly, and stony and from shallow to deep. Typically, the soils contain a high amount of coarse fragments and are shallow in depth. Permeability and water holding capacity generally are moderate. Runoff is medium to rapid, depending on slope and soil texture.

Parent Material Kind: Mass Movement Deposits
Parent Material Origin: Mixed

Surface Texture:

1. GRV-L
2. GR-FSL

Surface Texture Modifier:

1. GRV-l, CBX-SL, GRV-SL, GRV-FSL
2.

Subsurface Texture Group: N/A
Surface Fragments <=3" (% Cover): N/A
Surface Fragments >3" (% Cover): N/A
Subsurface Fragments <=3" (%Volume): N/A
Subsurface Fragments >=3" (%Volume): N/A

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Impermeable	Slow
Depth (inches):	4-20	>72
Electrical Conductivity (mmhos/cm):	0	2.00
Sodium Absorption Ratio:	N/A	N/A
Soil Reaction (1:1 Water):	7.9	8.4
Soil Reaction (0.1M CaCl2):	N/A	N/A
Available Water Capacity (inches):	1	5
Calcium Carbonate Equivalent (percent):	N/A	N/A

PLANT COMMUNITIES

Ecological Dynamics of the Site:
Future Development.

Plant Communities and Transitional Pathways (diagram)
Future Development.

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 Narrative Label: HCPC

Plant Community Narrative:
The climax vegetation on this site is diverse due to a wide range in edaphic and physiographic features. Typically the potential plant community is a shrub-grassland complex; scattered trees occur on north and east exposures.

Canopy Cover	
Trees	18
Shrubs and half shrubs	18

Ground Cover (Aveage Percent of Surface Area).	
Grasses & Forbs	23
Bare ground	25
Surface gravel	22
Surface cobble and stone	20
Litter (percent)	10
Litter (average depth in cm.)	1

Plant Community Annual Production (by plant type):

	Annual Production (lbs/ac)		
Plant Type	Low	RV	High
Grass/Grasslike	150	281	413
Forb	20	38	55
Tree/Shrub/Vine	30	56	83
Lichen			
Moss			
Microbiotic Crusts			
Totals	200	375	550

Plant Community Composition and Group Annual Production:
Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	BOER4	Black grama	56-94	56-94
2	BOCU	Sideoats grama	19-56	19-56
3	BOGR2	Blue grama	19-56	19-56
	PLJA	Galleta		
4	MUPO2	Bush muhly	11-19	11-19
	MUSE	Curlyleaf muhly		
	MUPA2	New Mexico muhly		
5	HENE5	New Mexico feathergrass	11-19	11-19
	HECO26	Neddle and thread		
6	SPNE	Gyp dropseed	38-56	38-56
	BOHI2	Hairy grama		
	ACHY	Indian ricegrass		
	SPAI	Alkali sacaton		
	TRIDE	Tridens spp.		
	2GRM	OTHER Grasses		

Plant Type - Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
7	ATCA2	Fourwing saltbush	11-26	11-26
	ATCO	Shadscale		
	RHTR	Skunkbush sumac		
	QUTU2	Shrub liveoak		
8	PAIN2	Mariola	11-19	11-19
	DALEA	Dalea spp.		
	EPVI	Mormon tea		
	ARBI3	Bigelow sagebrush		
9	NOMI	Sacahuista – Nolina	11-19	11-19
	YUCCA	Yucca spp.		
	OPUNT	Cactus spp.		
	2SHRUB	OTHER Shrubs/Trees		

Plant Type – Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
10	LESQU	Bladderpod	19-56	19-56
	BAMU	Desert baileya		
	THAC	Pricklyleaf dogweed		
	ERIOG	Wildbuckwheat		
	TIHI	Hairy coldenia		
	TICAC	Gray coldenia		
	2FORB	OTHER Forbs		

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Other grasses that could appear on this site would include: Plains lovegrass, sandhill muhly, threeawn spp., bottlebrush squirreltail, cane bluestem, vine mesquite

Other woody plants include: Creosotebush, pale wolfberry, algerita, rabbitbrush, broom snakeweed

Other forbs include: Globemallow, cryptantha, fleabane, arid mustard

Plant Growth Curves
Growth Curve ID NM-2221
Growth Curve Name: HCPC
Growth Curve Description: SD-1 Mesa Breaks HCPC Warm Season Plant Community

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
		3	5	10	10	25	30	12	5		

Plant Growth Curves
Growth Curve ID NM-2222
Growth Curve Name: HCPC
Growth Curve Description: SD-1 HCPC Mesa Breaks Cool Season Plant Community

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
		15	20	20	2	5	10	15	13		

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:
This site provides habitats which support a resident animal community that is characterized by mule deer, coyote, desert cottontail, Texas antelope squirrel, Botta's pocket gopher, brown towhee, scaled quail, roadrunner, cactus wren, collared lizard, and western ribbon snake. This site provides nesting opportunities for mockingbird, western kingbird, and Swainson's hawk.

Hydrology Functions:
The runoff curve numbers are determined by field investigations using hydraulic cover conditions and hydrologic soil groups.

Hydrologic Interpretations	
Soil Series	Hydrologic Group
Orthids	NONE

Recreational Uses:
This site is well suited to hunting, hiking, horseback riding, nature observation, and photography. The natural beauty of this site is a result of the diversity in vegetation, landscapes, and soil colors.

Wood Products:
Wood products, including fuelwood, fence posts, and landscape trees are produced on areas within the site. These are not, however, produced in significant amounts.

Other Products:

Approximately 85 percent of the vegetative production on this site is suitable as forage for domestic livestock and wildlife. Grazing distribution may be a problem; more level areas within the site receive more grazing pressure than the steeper areas. Construction of livestock waterings, saltings, cross fencing, and trails may improve livestock distribution.

Inadequate management of the site leads to repetitive grazing of the most desirable plant species, and reduce the vigor and productivity of these plants. The result is a deterioration in the potential plant community indicated by a decrease in black grama, blue grama, and sideoats grama, Bush and New Mexico muhly, plains lovegrass, New Mexico feathergrass, and fourwing saltbush. Plant species that increase include galleta, hairy grama, tridens, ring muhly, dropseeds, mariola, cactus, and pinyon-juniper. A planned grazing system with periodic deferment is best to maintain the desireable balance between plant species and to maintain the natural productivity and plant vigor.

In addition to domestic livestock, deer, pronghorn, small mammals, and birds also use this site.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	5.7 – 7.6
75 – 51	7.0 – 11.4
50 – 26	10.8 – 22.9
25 – 0	22.9+

Plant Preference by Animal Kind:

	Code	Species Preference	Code
Stems	S	None Selected	N/S
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruit/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Animal Kind: Livestock

Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Black grama	Bouteloua eriopoda	EP	P	P	P	P	P	P	P	P	P	P	P	P
Sideoats grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Blue grama	Bouteloua gracilis	EP	P	P	P	P	P	P	P	P	P	P	P	P
Bush muhly	Muhlenbergia porteri	EP	P	P	P	P	P	P	P	P	P	P	P	P
New Mexico Muhly	Muhlenbergia pauciflora		P	P	P	P	P	P	P	P	P	P	P	P
New Mexico feathergrass	Hesperostipa neomexicana		P	P	P	P	P	P	P	P	P	P	P	P
Needle&Thread	Hesperostipa comata	EP	P	P	P	P	P	P	P	P	P	P	P	P
Indian ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	P	P	P	P	P	P	P
Fourwing saltbush	Atriplex canescens	EP	P	P	P	P	P	P	P	P	P	P	P	P
Some Forbs	AAFF,PPFF		P	P	P	P	P	P	P	P	P	P	P	P
Galleta	Pleuraphis jamesii	EP	D	D	D	D	D	D	D	D	D	D	D	D
Curlyleaf muhly	Muhlenbergia setiflora	EP	D	D	D	D	D	D	D	D	D	D	D	D
Hairy grama	Bouteloua hirsuta	EP	D	D	D	D	D	D	D	D	D	D	D	D
Wolftail	Lycurus phleoides	EP	D	D	D	D	D	D	D	D	D	D	D	D
Alkali sacaton	Sporobolus airoides	EP	D	D	D	D	D	D	D	D	D	D	D	D
Tridens	Tridens spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Yucca	Yucca spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Bladderpod	Lesquerella	EP	D	D	D	D	D	D	D	D	D	D	D	D
Gyp dropseed	Sporobolus nealleyi	EP	U	U	U	U	U	U	U	U	U	U	U	U
Skunkbush sumac	Rhus trilobata	EP	U	U	U	U	U	U	U	U	U	U	U	U
Shrub liveoak	Quercus turbinella	EP	U	U	U	U	U	U	U	U	U	U	U	U
Mormon tea	Ephedra viridis	EP	U	U	U	U	U	U	U	U	U	U	U	U
Sacahuista-Nolina	Nolina microcarpa	EP	U	U	U	U	U	U	U	U	U	U	U	U
Cactus spp.	Opuntia spp.	EP	U	U	U	U	U	U	U	U	U	U	U	U

Pickleleaf dogweed	Thymophylla acerosa	EP	U	U	U	U	U	U	U	U	U	U	U	U

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

Inventory Data References (narrative):

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

State Correlation:
This site has been correlated with the following sites:

Type Locality:

State:	Latitude:	Longitude:	
County:	Section:	Township:	Range:
Narrative Location Description:			

Is the type locality sensitive? Yes ☐ No ☐
General Legal Description:

Relationship to Other Established Classifications:

Other References:
Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Desertic Basins, Plains and Mountains, Major Land Resource Areas of New Mexico. This site has been mapped and correlated with soils in the following soil surveys. Valencia, and Bernalillo.

Characteristic Soils Are:	
Orthids – Rock outcrop	
Akela	
Nickel	

Other Soils included are:	

Site Description Approval:

{PRIVATE}Author	Date	Approval	Date
Don Sylvester	07/12/1979	Don Sylvester	07/12/1979

Site Description Revision:

{PRIVATE}Author	Date	Approval	Date
Santiago Misquez	03/04/02	George Chavez	03/05/03